

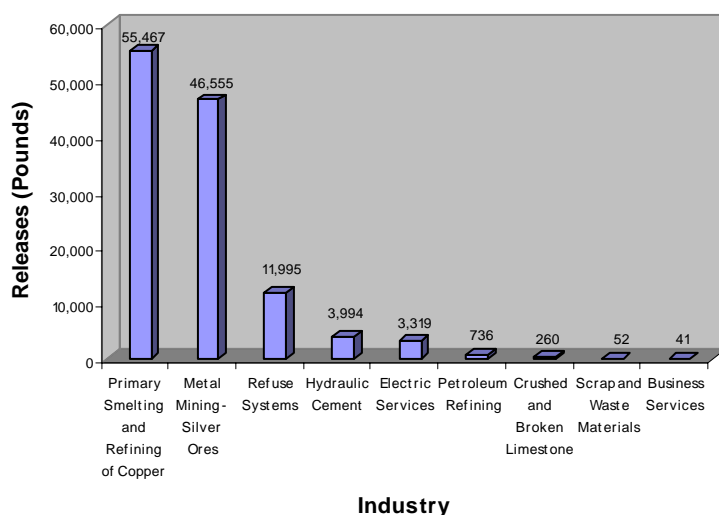


Mercury and Mercury Compounds Report: 2002 Toxics Release Inventory

U.S. EPA Region 9
*Arizona, California,
Hawaii, Nevada, the
Pacific Islands, and
Tribal Nations*

A)

Total On and Off-Site Releases of Mercury and Mercury Compounds

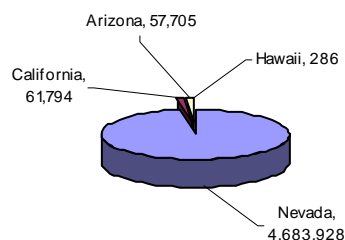


On and off-site releases of mercury and mercury compounds from the gold mining industry totaled 4.7 million pounds

B)

Note: On and off-site releases is defined as the amount of toxic chemical releases on-site (to air, water, underground injection, landfills and other land disposal), and the amount transferred off-site for disposal. Chart A shows mercury and mercury compound releases (in pounds) for the top industries. Chart B gives state/territory totals for on and off-site mercury and mercury compound releases (in pounds).

Total On and Off-Site Releases of Mercury and Mercury Compounds by State



The 2002 TRI Data

EPA has just made public the 2002 data on toxic chemicals that were released* to the air, water and land

within the Pacific Southwest region. This information comes from the Toxics Release Inventory (TRI), a federal community right-to-know program.

**Release is defined as the amount of a toxic chemical released on-site (to air, water, underground injection, landfills and other land disposal), and the amount transferred off-site for disposal.*

In the year 2000, TRI was expanded to include additional persistent, bioaccumulative and toxic (PBT) chemicals, and required reporting for these chemicals at lower thresholds. PBT pollutants are toxic chemicals that persist in the environment and bioaccumulate in food chains, thus posing risks to human health and ecosystems.

While mercury and mercury compounds have been on the list of reportable chemicals since 1987, for the year 2000 the reporting threshold was drastically lowered (from 25,000 pounds manufactured or processed, and 10,000 pounds otherwise used to 10 pounds manufactured, processed, or otherwise used). As a result, additional facilities are required to report releases of mercury and mercury compounds.

A Note on Risk

It is important to note that release cannot be directly equated with risk. To evaluate risk, release data must be combined with information about chemical toxicity, site-specific conditions, and exposure. In addition, this data does not indicate whether a facility is violating environmental laws. Many of the substances reported through this program are subject to state and federal regulations designed to protect human health and the environment.

Industries

A facility is subject to TRI reporting requirements if it: has 10 or more full-time employees; is classified under a reportable Standard Industrial Classification (SIC) code; and manufactures, processes, or otherwise uses any of the listed toxic chemicals in amounts greater than the threshold quantities. For most chemicals (excluding PBTs) the thresholds are 25,000 pounds for manufactured or processed, and 10,000 pounds for otherwise used.

Manufacturing industries have been reporting their releases since 1987 and federal facilities started reporting in 1994. In 1998, seven additional industry sectors began reporting their toxic chemical releases for the first time. These sectors are metal and coal mining, electricity generation, commercial hazardous waste treatment, solvent recovery, petroleum bulk terminals, and wholesale chemical distributors.

Releases

As shown in the table below, there was an overall 12% increase in on- and off-site releases of mercury and mercury compounds for the year 2002.

On and Off-Site Releases

Release Media	Reporting Year		Change (pounds)
	2001	2002	
Air	20,452	15,548	- 4,904
Land	4,257,602	4,786,205	+ 528,603
Water	15	28	+ 13
UI *	3	1	- 2
Off-Site	21,732	1,932	- 19,800
Net Change			+ 503,910
Percent Change			+ 12%

* Underground Injection

Barrick Goldstrike Mines and Newmont Mining Corp. Twin Creeks Mine, both located in Nevada, are responsible for 76% of the reported increases. Newmont Mining Corp. Carlin South Area is responsible for 84% of the reported decreases.

The TRI data for 2002 shows that, with the exception of Hawaii, Region 9 states rank higher than most states in the U.S. for releases of mercury and mercury compounds. In a state-by-state comparison Nevada, California, Arizona and Hawaii ranked 1, 2, 3 and 46, respectively for total on- and off-site releases of mercury and mercury compounds. Nevada ranked number 1, reporting 4,683,928 pounds of on and off-site releases of mercury and mercury compounds. No mercury releases were reported in Region 9's Pacific Island Territories, and the following table gives the total pounds of mercury and mercury compounds reported in Region 9:

Mercury and Mercury Compound Releases (in pounds) by State

State	Air	Land	Under Ground Injection	Water	Off-Site
Arizona	1,815	55,797	0	0	93
California	4,186	55,888	0	4	1,716
Hawaii	282	0	0	4	0
Nevada	9,266	4,674,519	1	19	123

Reporting Industry Sectors – the 2002 Data

A review of the TRI data suggests that approximately 98% of mercury and mercury compound releases in the

Region comes from the metal mining industry. The other 2% can be attributed to hazardous waste treatment facilities; the cement, lime and glass industry; electricity generators; and petroleum refineries. A detailed summary of releases by industry sector is provided in the table below.

**Mercury and Mercury Compound
Releases (in pounds) by Industry Sector**

Industry	Air	Land	Water	Off-Site
Metal Mining - Gold Ores	8647	4,672,299	19	108
Primary Smelting and Refining of Copper	192	55,275	0	0
Metal Mining - Silver Ores	123	46,432	0	0
Refuse Systems	5	10,656	0	1,333
Hydraulic Cement	3618	321	0	55
Electric Services	2368	951	0	0
Petroleum Refining	459	1	8	268
Crushed and Broken Limestone	0	260	0	0
Scrap and Waste Materials	0	0	0	52
Business Services	0	0	0	41

Metal Mining

In the Pacific Southwest Region, 27 metal mines reported over 4 million pounds of on-site mercury and mercury compound releases, most of which were released on-site to land. Mercury and mercury compounds may be processed as a trace constituent in metal ores or recovered as a by-product from gold ores.

Many mines extract, move, store, process, and dispose of large amounts of waste rock and ore materials, which often contain low concentrations of naturally occurring metals. The vast majority of this material is placed in surface impoundments or on the land, and the metals are reported as on-site releases to land. This previously buried material is exposed to potential leaching by rain, snow, and acid mine drainage, and must be carefully managed and monitored to prevent any surface water or groundwater contamination.

There are also air releases from ore processing and metal refining operations. For air releases of mercury and mercury compounds, three copper mines reported a total of 36 pounds; two silver mines reported 123 pounds, and 22 gold mines reported a total of 8,647 pounds.

Hazardous Waste Treatment

Ten hazardous waste treatment facilities reported on-site disposal of 10,656 pounds of mercury and mercury compounds into permitted landfills and 5 pounds to the air.

Cement Manufacturing

Mercury may be processed or otherwise used as a trace element in raw materials and fuels in the manufacture of Portland cement. Twelve cement manufacturing facilities reported 3,618 pounds of releases to the air, and 321 pounds of on-site land releases.

Electricity Generation

Twenty electric generating facilities reported 3,319 pounds of on-site mercury releases. Mercury compounds may be formed during the combustion process. Only facilities that burn coal or oil to generate electricity commercially need to report to the Toxics Release Inventory Program.

Refineries

Twenty petroleum refineries reported 468 pounds of on-site mercury releases. Mercury may be processed or otherwise used as trace components in crude oil.

Top Region 9 Counties for On-site Releases in 2002

County	Pounds Released
Elko, Nevada	2,652,452
Humboldt, Nevada	1,280,012
Eureka, Nevada	521,611
Lander, Nevada	159,060
Pinal, Arizona	55,000
Lake, California	48,713
Pershing, Nevada	46,627
White Pine, Nevada	16,716
Nye, Nevada	6,079
Kings, California	4,651

Top Facilities for Total On- and Off-Site Releases

Facility Name	Location	Pounds Release
Barrick Goldstrike Mines, Inc.	Elko, Nevada	2,582,261
Newmont Mining Corp. Twin Creeks Mine	Golconda, Nevada	1,070,561
Newmont Mining Corp. Carlin North Area	Carlin, Nevada	300,022
Newmont Mining Corp. Carlin South Area	Carlin, Nevada	211,643
Newmont Mining Corp. Lone Tree Mine	Valmy, Nevada	169,027
Cortez Gold Mines Mill 2	Crescent Valley, Nevada	158,871
Jerritt Canyon Joint Venture	Elko, Nevada	69,672
BHP Copper N.A. San Manuel Ops.	San Manuel, Arizona	55,000
McLaughlin Mine	Lower Lake, California	48,713
Coeur Rochester Inc.	Lovelock, Nevada	46,366

On-line Access

For national information on data releases, see:

<http://www.epa.gov/tri>

The TRI data is available through Envirofacts Warehouse, EPA's premier internet site for distributing environmental information at:

<http://www.epa.gov/enviro>

or the TRI Explorer tool:

<http://www.epa.gov/triexplorer>

For general information on the Toxics Release Inventory, including reporting requirements for businesses, go to:

<http://www.epa.gov/region09/toxic/tri>

For more information on the EPA's PBT Chemicals Program, go to:

<http://www.epa.gov/opptintr/pbt/>

Information and Assistance

Region 9 staff will answer questions and assist you in learning more about the TRI Program in Region 9.

U.S. EPA Region 9
Nancy Sockabasin, TRI Coordinator
(415) 972-3772